

performing a first chemical mechanical polishing process with a first slurry to remove the metal layer until the barrier layer is exposed; and

2/12/03 performing a second chemical mechanical polishing process with a second slurry and an oxidant solution to remove the barrier layer and adjusting a zeta potential of the metal layer with the solution during the removal of the barrier layer.

REMARKS

The Office asserts that Farkas describes a second CMP using a second slurry identical to that described by the Applicants' for the same purpose. Applicants respectfully disagree. The second slurry Farakas contains an ethylenediamine additive and other solids for the removal of the barrier. There is no teaching or suggestion in Farakas that the second slurry contains any oxidant so that zeta potential of the metal layer is adjusted in a way that carbon-rich particles are prevented from adhering onto the surface of the metal layer.

asked by this among many

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VERSION WITH MARKINGS TO SHOW CHANGES MADE

Please amend claim 1 as follow:

1. (Amended) A method of fabricating a damascene structure, comprising:
 - providing a substrate;
 - forming a dielectric layer on the substrate;
 - defining the dielectric layer to form an opening, wherein a portion of the substrate is exposed by the opening;
 - forming a barrier layer conformal to a profile of the opening;
 - forming a metal layer over the substrate, wherein the metal layer fills the opening and covers the dielectric layer;
 - performing a first chemical mechanical polishing process with a first slurry to remove the metal layer until the barrier layer is exposed; and
 - performing a second chemical mechanical polishing process with a second slurry and an oxidant solution to remove the barrier layer and adjusting a zeta potential of the metal layer with the solution during the removal of the barrier layer.